

## AMENDMENTS TO THE CLAIMS

### Listing of Claims:

Claim 1 (currently amended): A process for the preparation of racemic diol free base and/or or acid addition salt thereof, and/or R- or S-diol free base and/or or acid addition salt thereof from an initial non-racemic mixture of R- and S-diol free base or acid addition salt thereof, comprising the steps of: a separation of an initial non-racemic mixture of R- and S-diol free base and/or acid addition salt with more than 50% of one of the enantiomers into a fraction being enriched with S-diol or R-diol free base and/or acid addition salt and a fraction comprising RS-diol free base and/or acid addition salt wherein the ratio of R-diol:S-diol is equal to 1:1 or closer to 1:1 than in the initial mixture of R- and S-diol characterized in that

- i) precipitating RS-diol free base and/or or acid addition salt thereof is precipitated from a solution of the initial non-racemic mixture, leaving a final solution phase comprising R- or S-diol free base or acid addition salt thereof, wherein the precipitated RS-diol comprises a ratio of R-diol:S-diol that is equal to 1:1 or closer to 1:1 than the initial non-racemic mixture of R- and S-diol free base and/or acid addition salt; or  
mixing a solution of the initial non-racemic mixture with a solvent to preferentially dissolve R- or S-diol free base and/or or acid addition salt thereof into a final solution phase is dissolved into a solvent from the initial non-racemic mixture of R- and S-diol free base and/or acid addition salt in said solvent, leaving a residue comprising RS-diol free base and/or or acid addition salt thereof;
- ii) separating the residue/precipitate formed is separated from the final solution phase;

- iiia) iii.a) if the residue/precipitate is crystalline, it is optionally recrystallizing the residue/precipitate ~~recrystallised~~ one or more times to form racemic diol; or
- iiib) iii.b) if the residue/precipitate is not crystalline, optionally repeating steps i) and ii) ~~are optionally repeated~~ until a crystalline residue/precipitate is obtained and optionally recrystallizing the crystalline residue/precipitate is ~~optionally recrystallised~~ one or more times to form racemic diol;
- iiic) iv) optionally subjecting the final solution phase ~~is optionally subjected~~ to further purification; and
- v) isolating S-diol or R-diol free base ~~and/or or~~ acid addition salt thereof ~~is isolated~~ from the final solution phase; and
- vi) vi.a) optionally converting the S-diol or R-diol free base ~~free bases of the diols obtained are optionally converted to an acid addition salts salt thereof; or~~
- vi.b) optionally converting the acid addition salts salt of the S-diol or R-diol free base ~~diols obtained are optionally converted to other another acid addition salts salt; or~~
- vi.c) optionally converting the acid addition salts salt of the S-diol or R-diol free base ~~diols obtained are optionally converted to the corresponding free bases base.~~

Claim 2 (currently amended): A process according to claim 1 for the preparation of S-diol or R-diol free base ~~and/or or~~ acid addition salt characterized in that thereof from an initial non-racemic mixture of R- and S-diol free base or acid addition salt thereof, comprising the steps of:

- i) precipitating RS-diol free base ~~and/or or~~ acid addition salt thereof ~~is precipitated~~ from a solution of the initial non-racemic mixture, leaving a final solution phase, wherein the precipitated RS-diol comprises a ratio of R-diol:S-diol that is equal to

- 1:1 or closer to 1:1 than the initial non-racemic mixture of R- and S-diol free base and/or acid addition salt; or
- mixing a solution of the initial non-racemic mixture with a solvent to preferentially dissolve R- or S-diol free base and/or or acid addition salt thereof into a final solution phase is dissolved into a solvent from the initial non-racemic mixture of R- and S-diol free base and/or acid addition salt in said solvent, leaving a residue comprising RS-diol free base and/or or acid addition salt thereof;
- ii) separating the residue/precipitate formed is separated from the final solution phase;[[,]] and
  - iii) optionally subjecting the final solution phase is optionally subjected to further purification; and
  - iv) isolating S-diol or R-diol free base and/or or acid addition salt thereof is isolated from the final solution phase.

Claim 3 (currently amended): A The process according to of claim 2, wherein the diol prepared is the S-diol free base and/or or acid addition salt thereof.

Claim 4 (currently amended): A The process according to of claim 2, wherein the diol prepared is the R-diol free base and/or or acid addition salt thereof.

Claim 5 (currently amended): A process according to claim 1 for the preparation of racemic diol free base and/or or acid addition salt thereof, comprising the steps of: characterized in that

- i) precipitating RS-diol free base and/or or acid addition salt thereof is precipitated from a solution of the initial non-racemic mixture, leaving a final solution phase, wherein the precipitated RS-diol comprises a ratio of R-diol:S-diol that is equal to 1:1 or closer to 1:1 than the initial non-racemic mixture of R and S diol free base and/or acid addition salt; or  
mixing a solution of the initial non-racemic mixture with a solvent to preferentially dissolve R- or S-diol free base and/or or acid addition salt thereof into a final solution phase is dissolved into a solvent from the initial non-racemic mixture of R and S diol free base and/or acid addition salt in said solvent, leaving a residue comprising RS-diol free base and/or or acid addition salt thereof;
- ii) separating the residue/precipitate formed is separated from the final solution phase;[[,]]
  - iii) if the residue/precipitate is crystalline, it is optionally recrystallizing the residue/precipitate reecrystallised one or more times to form racemic diol; or
  - iv) if the residue/precipitate is not crystalline, optionally repeating steps i) and ii) are optionally repeated until a crystalline residue/precipitate is obtained and optionally recrystallizing the crystalline residue/precipitate is optionally reecrystallised one or more times to form racemic diol.

Claim 6 (currently amended): The process of claim 1, according to any one of claims 1-5 wherein the initial non-racemic mixture of R and S diol free base and/or acid addition salt with more than 50% of one of the enantiomers contains more than 50% of S-diol, more preferred more than 70% of S diol or most preferred more than 90% of S diol.

Claim 7 (currently amended): The process of claim 1, according to any one of claims 1-5 wherein the initial non-racemic mixture of R- and S-diol free base and/or acid addition salt with more than 50% of one of the enantiomers contains more than 50% of R-diol, more preferred more than 70% of R-diol or most preferred more than 90% of R-diol.

Claim 8 (currently amended): The process of claim 1 according to any one of claims 1-7, wherein the ratio of R-diol:S-diol in the RS-diol of the residue/precipitate is in the range of 0.5:1.5 to or 0.9:1.1 or 0.95:1.05 or 0.99:1.01 or 0.98:1.02 or preferably 1:1.

Claim 9 (currently amended): The process of claim 1, according to any one of claims 1-8 wherein the RS-diol comprised in of the residue/precipitate and the R- or S-diol of the final solution phase are each independently is in the form of a free base and/or or an acid addition salt thereof; and independently thereof the R- or S-diol comprised in the final solution phase is in the form of a free base and/or as an acid addition salt thereof.

Claim 10 (currently amended): The process of claim 1, according to any one of claims 1-9 wherein RS-diol free base and/or or acid addition salt thereof is precipitated from a solution of the initial non-racemic mixture of R- and S-diol free base and/or acid addition salt.

Claim 11 (currently amended): The process of claim 1, according to any one of claims 1-10 wherein the acid used for precipitating RS-diol is precipitated using as a salt in step i) is an acid

~~which precipitates a mixture of the R and S enantiomers and leaves the mother liquor enriched with either the S or R enantiomer of the diol free base and/or acid addition salt.~~

Claim 12 (currently amended): The process of according to claim 11 wherein the initial non-racemic mixture is obtained or dissolved in a suitable solvent and the acid is may be:

~~added after the initial non-racemic mixture of R and S diol free base and/or acid addition salt is obtained or dissolved in a suitable solvent; and/or~~

~~present in the solvent during and/or prior to dissolution of the initial non-racemic mixture of R and S diol free base and/or acid addition salt; and/or~~

~~present in the initial non-racemic mixture of R and S diol free base and/or acid addition salt during and/or prior to dissolution in the solvent.~~

Claim 13 (currently amended): The process of claim 1, according to any one of claims 1-9 wherein a solution of the initial non-racemic mixture is mixed with a solvent to preferentially dissolve R- or S-diol free base and/or or acid addition salt thereof into a final solution phase is dissolved into a solvent from the initial non-racemic mixture of R- and/or S-diol free base and/or acid addition salt in said solvent, leaving a residue comprising RS-diol free base and/or or acid addition salt thereof.

Claim 14 (currently amended): The process of claim 1, according to any one of claims 1-9 and 13 wherein RS-diol acid addition salt is formed as a residue having an the acidic part that comprises of the RS diol acid addition salt comprised in the residue formed in step i) is an acid

~~which allows the selective dissolution of either R or S diol free base and/or acid addition salt and leaves the undissolved material enriched with the RS diol acid addition salt.~~

Claim 15 (currently amended): The process of according to claim 13 wherein the acid is may be:

~~present in the solvent before the initial non-racemic mixture of R and S diol free base and/or acid addition salt is mixed with the solvent; and/or~~

~~mixed with the solvent together with the initial non-racemic mixture of R and S diol free base and/or acid addition salt; and/or~~

~~mixed with the solvent after the initial non-racemic mixture of R and S diol free base and/or acid addition salt is mixed with the solvent; and/or~~

~~present in the initial non-racemic mixture of R and S diol free base and/or acid addition salt during and/or prior to the mixing with the solvent.~~

Claim 16 (currently amended): A The process of claim 14, method according to claims 1-15 wherein the RS diol acid addition salt is obtained from the initial non-racemic mixture of R and S diol free base and/or acid addition salt in is mixed with a solvent selected from the group consisting of toluene, ethylacetate, diethylether, THF, water, alcohols such as iso-propylalcohol, acetonitrile, and ketones, and such as acetone and methyl isobutyl ketone; or mixtures thereof.

Claim 17 (currently amended): The process of claim 1, according to any one of claims 1-16 wherein the residue/precipitate is formed using an acid selected from used in step i) is HCl, HBr, H<sub>2</sub>S0<sub>4</sub>, p-toluenesulfonic acid, methanesulfonic acid, acetic acid, and or oxalic acid.

Claim 18 (currently amended): The process of according to claim 17, wherein the acid is selected from ~~used in step i)~~ is HCl, HBr, and or oxalic acid; ~~thereby a hydrobromide salt, hydrochloride salt or oxalate salt of the RS-diol is formed, preferably in crystalline form.~~

Claim 19 (currently amended): The process of claim 1 according to any one of claims 1-18, wherein the residue/precipitate is formed using 0.2-10 mol of acid ~~may be used, such as 0.2-0.4 mol, or 0.4-0.6 mol, or 0.9-1.1 mol or 1.8-2.2 mol of acid is used for each mol of S- and R-diol comprised in the initial non-racemic mixture of R- and S-diol free base and/or acid addition salt.~~

Claim 20 (currently amended): The process of claim 1 according to any one of claims 1-18, wherein the residue/precipitate is formed using 0.3-4.0 mol, ~~such as 0.4-0.6 mol, or 0.9-1.1 mol or 1.8-2.2 mol of acid is used for each mol of RS-diol comprised in the residue/precipitate.~~

Claim 21 (currently amended): The process of claim 1, according to any one of claims 1-10 and 13 wherein the residue/precipitate is a free base of the RS-diol free base is obtained in step i), preferably in crystalline form.

Claim 22 (currently amended): A method according to any one of claims 1-10, 13 and 21  
The process of claim 1, wherein the residue/precipitate is RS-diol free base is obtained from and the initial non-racemic mixture of R- and S-diols is in a solvent selected from the group consisting of alkanes such as heptane or hexane, aromatic hydrocarbons such as toluene, benzene and xylene,

polar solvents such as acetonitrile, alcohols, such as methanol and iso propylalcohol and ketones, and such as methyl isobutyl ketone; or mixtures thereof.

Claim 23 (currently amended): The process of claim 1, according to any one of claims 1-22 wherein the final solution phase is subjected to one or more further purifications according to separations of RS diol as described under steps i) and ii) before isolation of the S-diol or (R-diol) R-diol free base or acid addition salt thereof from the final solution phase.

Claim 24 (currently amended): The process of claim 1, according to any one of claims 1-4 and 6-23 wherein the S-diol (or R-diol) or R-diol free base or acid addition salt thereof is isolated from the final solution phase by evaporation of the solvent.

Claim 25 (currently amended): The process of claim 1, according to any one of claims 1-4 and 6-24 wherein the final solution phase is acidic and the S-diol (or R-diol) or R-diol free base or acid addition salt thereof is isolated from the final solution phase by basifying basification of the final solution phase, followed by phase separation or extraction with a solvent, followed by evaporation of the solvent.

Claim 26 (currently amended): The process of claim 1 according to any one of claims 1-4 and 6-24, wherein the S-diol (or R-diol) or R-diol free base and/or or acid addition salt thereof is isolated from the final solution phase by precipitation of the R- or S-diol free base and/or or acid addition salt thereof; suitably a phosphate salt or an oxalate salt of R- or S-diol is precipitated.

Claim 27 (currently amended): The process of claim 1, according to any one of claims 1-4  
~~and 6-26~~ wherein the S-diol ~~(or R-diol)~~ or R-diol free base or acid addition salt thereof obtained  
contains a minor amount of the opposite enantiomer such as less than 3%, more preferred less than  
2%, or most preferred less than 1%.

Claim 28 (canceled)

Claim 29 (currently amended): A method for the preparation of citalopram free base or an  
~~and/or as~~ acid addition salt thereof, and/or S-citalopram free base and/or as or an acid addition salt  
thereof or and/or R-citalopram free base and/or as or an acid addition salt thereof, comprising the  
process of claim 1 preparation of RS diol free base and/or as acid addition salt and/or S diol free  
base and/or as acid addition salt and/or R diol free base and/or as acid addition salt according to  
any of claims 1-27 followed by ring closure.

Claim 30 (new): The process of claim 6, wherein the initial non-racemic mixture contains  
more than 70% of S-diol.

Claim 31 (new): The process of claim 30, wherein the initial non-racemic mixture  
contains more than 90% of S-diol.

Claim 32 (new): The process of claim 7, wherein the initial non-racemic mixture contains  
more than 70% of R-diol.

Claim 33 (new): The process of claim 32, wherein the initial non-racemic mixture contains more than 90% of R-diol.

Claim 34 (new): The process of claim 8, wherein the ratio of R-diol:S-diol in the RS-diol of the residue/precipitate is 0.5:1.5, 0.9:1.1, 0.95:1.05, 0.99:1.01, 0.98:1.02, or 1:1.

Claim 35 (new): The process of claim 16, wherein the solvent is selected from isopropylalcohol, acetone, methyl isobutyl ketone, and mixtures thereof.

Claim 36 (new): The process of claim 18, wherein a crystalline hydrobromide salt, hydrochloride salt or oxalate salt of the RS-diol is formed.

Claim 37 (new): The process of claim 19, wherein the residue/precipitate is formed using an amount of acid selected from 0.2-0.4 mol, 0.4-0.6 mol, 0.9-1.1 mol, and 1.8-2.2 mol, for each mol of S- and R-diol comprised in the initial non-racemic mixture.

Claim 38 (new): The process of claim 20, wherein the residue/precipitate is formed using an amount of acid selected from 0.4-0.6 mol, 0.9-1.1 mol, and 1.8-2.2 mol for each mol of RS-diol comprised in the residue/precipitate.

Claim 39 (new): The process of claim 22, wherein the solvent is selected from heptane, hexane, toluene, benzene, xylene, acetonitrile, methanol, iso-propylalcohol, methyl isobutyl ketone, and mixtures thereof.

Claim 40 (new): The process of claim 26, wherein an S-diol or R-diol acid addition salt is precipitated in the form of a phosphate salt or an oxalate salt.

Claim 41 (new): The process of claim 27, wherein the S-diol or R-diol free base or acid addition salt thereof obtained contains less than 3% of the opposite enantiomer.

Claim 42 (new): The process of claim 41, wherein the S-diol or R-diol free base or acid addition salt thereof obtained contains less than 2% of the opposite enantiomer.

Claim 43 (new): The process of claim 42, wherein the S-diol or R-diol free base or acid addition salt thereof obtained contains less than 1% of the opposite enantiomer.